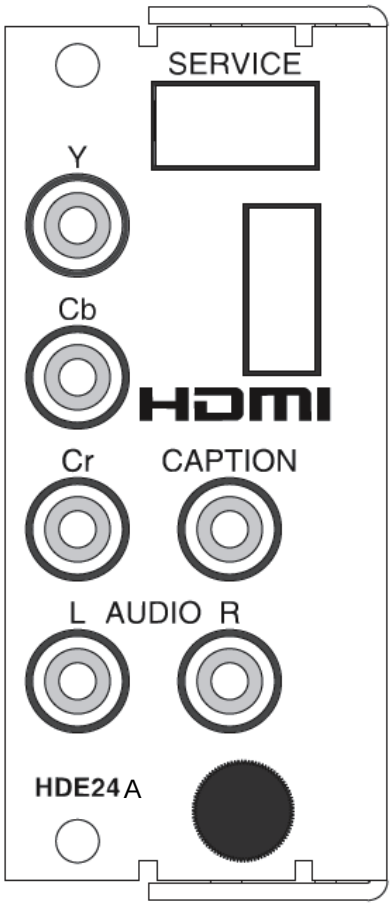
HDE24A High-Definition Encoder

Instruction Manual



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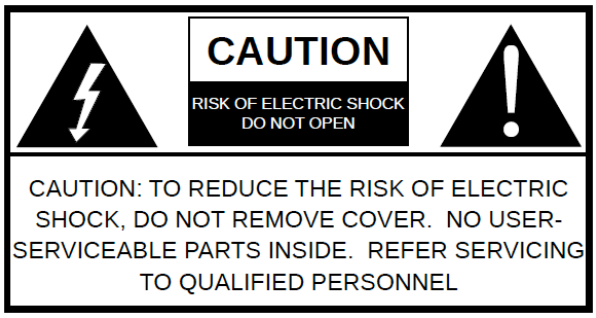
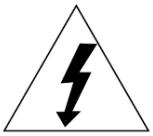
Caution Statements:

WARNING: TO PREVENT FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE TO RAIN OR MOISTURE


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL

A product and cart combination should be moved with care. Quick stops, excessive force and uneven surfaces may cause the product and cart combination to overturn.



The lightning flash with arrow head symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

WARNING:	TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT OPEN THE CABINET, REFER SERVICING TO QUALIFIED PERSONNEL ONLY.

CAUTION:	TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION:	POUR PREVENIR LES CHOCS ELECTRIQUES, NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

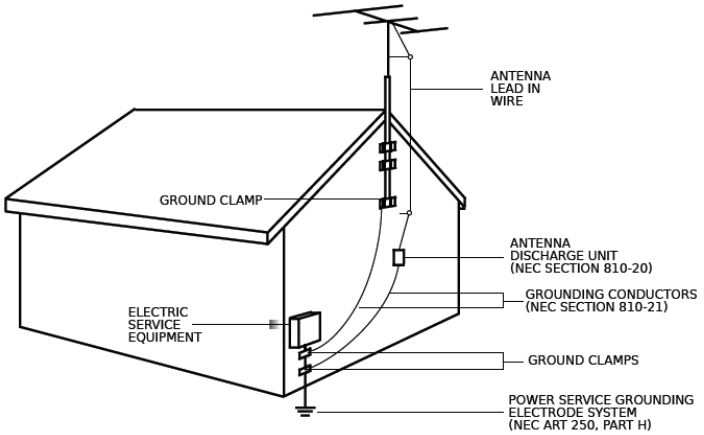
Important Safety Instructions:

1. **Read Instructions:** All the safety and operating instructions should be read before the product is operated.
2. **Retain Instructions:** The safety and operating instructions should be retained for future reference.
3. **Heed Warnings:** All warnings on the product and in the operating instructions should be adhered to.
4. **Follow Instructions:** All operating and use instructions should be followed.
5. **Cleaning:** Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleansers. Use a damp cloth for cleaning.
6. **Attachments:** Do not use attachments that are not recommended by the product manufacturer as they may cause hazards.
7. **Water and Moisture:** Do not use this product near water—for example, near a bathtub, wash bowl, kitchen sink or laundry tub; in a wet basement; or near a swimming pool; and the like.

8. **Accessories:** Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.
9. A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.
10. **Ventilation:** Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or similar surface. This product should not be placed in a built-in installation such as bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
11. **Power Sources:** This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.
12. **Grounding or Polarization:** This product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug. Alternate Warnings – If this product is equipped with a three-wire grounding- type plug, a plug having a third (grounding) pin, the plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.
13. **Mise à la terre ou Polarisation:** Cet appareil est équipé avec un cordon d'alimentation à trois fils. Il est a brancher sur une prise ayant un connecteur a la terre. Assurez-vous que la connection a la terre ne manque pas.
14. **Power-Cord Protection:** Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
15. **Lightning:** For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.
16. **Power Lines:** An outside antenna system should not be located in the vicinity of overhead power lines, other electric light or power circuits, where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them may be fatal.
17. **Overloading:** Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.
18. **Object and Liquid Entry:** Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
19. **Servicing:** Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
20. **Damage Requiring Service:** Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
    a) When the power-supply cord or plug is damaged,
    b) If liquid has been spilled, or objects have fallen into the product,
    c) If the product has been exposed to rain or water,
    d) If the product does not operate normally by following the operating instructions.

    Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation, e. If the product has been dropped or damaged in any way, and f. When the product exhibits a distinct change in performance—this indicates a need for service.
21. **Replacement Parts:** When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutes may result in fire, electric shock or other hazards.
22. **Safety Check:** Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
23. **Wall or Ceiling Mounting:** The product should be mounted to a wall or ceiling only as recommended by the manufacturer.
24. **Heat:** The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

NOTE TO CABLE INSTALLER:
THIS REMINDER IS PROVIDED TO CALL THE CATV SYSTEM INSTALLER'S ATTENTION TO ARTICLE 820-40 OF THE NEC THAT PROVIDES GUIDELINES FOR PROPER GROUNDING AND, IN PARTICULAR, SPECIFIES THAT THE CABLE GROUND SHALL BE CONNECTED TO THE GROUNDING SYSTEM OF THE BUILDING, AS CLOSE TO THE POINT OF CABLE ENTRY AS PRACTICAL.


ANTENNA LEAD IN WIRE
GROUND CLAMP
ANTENNA DISCHARGE UNIT (NEC SECTION 810-20)
GROUNDING CONDUCTORS (NEC SECTION 810-21)
ELECTRIC SERVICE EQUIPMENT
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250, PART H)

NEC - NATIONAL ELECTRIC CODE
Example of antenna grounding as per National Electrical Code, ANSI/NFPA 70

4 Introduction, Setup, and Operation

Introduction

The Drake® HDE24A high-definition encoder generates an MPEG2 or MPEG4 H.264 video stream, with Dolby® AC-3 or MPEG1 layer 2 audio. This module is designed to be installed into the Drake EH24A- or MEQ1000-style chassis, which provide the control and output interfaces to the unit. The encoder accepts HDMI™ and component inputs, and can inject closed-captioning data from a synchronized composite video source (typically provided by the same decoder that produces the HD video stream).

Installation

This unit installs into the chassis in the same fashion as the SDE24 encoder; for chassis insertion instructions, see the manual for your particular chassis. DO NOT INSERT THIS ENCODER WITH POWER APPLIED TO THE CHASSIS - RESULTING DAMAGE WILL NOT BE COVERED BY THE LIMITED WARRANTY. Cable the inputs appropriately (see the Rear Panel Connections section for details).

Upgrading Firmware

The HDE24A's firmware may be upgraded in the field, using a removable USB flash drive. Once you have obtained the latest firmware version file, copy the file onto a removable flash drive. The file must not be placed in any sub-folder of the drive. Power down the chassis, insert the flash drive into the Service port on the unit, and apply power to the chassis. The HDE24A will automatically upgrade and then reboot. Once the unit is functioning normally again (encoded audio and video is being generated), remove the flash drive from the unit.

Operation

Power on the chassis, and select the newly-inserted HDE24A unit via the LEFT and RIGHT buttons on the front panel. The following configuration settings are available for the HDE24A (defaults listed in bold italics):

Video Source: *Component*, *HDMI, Composite* - sets the input video format

Resolution: *Scan,* ***1080i,*** *720p, 480p, 480i* - auto-scan input resolution, or force a particular video mode. Not available for composite (composite is always 480i)

Format: ***MPEG2,*** *MPEG4 H.264* - sets the video compression method used

MPEG4 Profile: ***Default,*** *Simple, Advanced Simple* - sets the MPEG4 video profile used (only available when format is MPEG4 H.264)

MPEG4 Level: ***0,*** *1, 2, 3, 4, 5* - sets the MPEG4 encoding level (only available when format is MPEG4 H.264)

Bitrate: *Range varies by resolution* - sets the bandwidth used by the video encoder **(15.0 Mbps)**

Brightness: Sets the video brightness - larger values increase brightness **(128)**

Contrast: Sets the video contrast -larger values increase contrast **(128)**

Saturation: Sets the video contrast - larger values increase saturation **(128)**

Hue: Adjusts the video color hue - behavior varies by input mode (**128** for Composite, **0** for other inputs)

Audio Source: Analog, HDMI - select audio input source (only available when video input is HDMI)

Audio Encode: AC-3, MP2 - changes audio encode format between Dolby AC-3 and MPEG1 Layer 2.

Audio Gain: varies audio level +/- 15dB (**0**, only avaliable when audio input is Analog)

NOTES

1. If the front panel display shows INVALID VIDEO, the incoming video is not correct for the input type and resolution settings. If the front panel display shows INVALID AUDIO, the HDMI embedded audio source is not available or not PCM (uncompressed).

2. This encoder will only support the specific video resolutions outlined in the Specifications table.

3. This encoder does not support HDMI copy protection (HDCP). All HDMI sources must be un-encrypted.

4. Composite video is supported -use the Component Y (green colored) input connector.

5. Closed-captioning data is automatically extracted when the encoder is in Composite mode. All other modes require a captioned composite video source input to the Caption connector.

6. Firmware updates may be required for MEQ1000 or EH24A chassis. MEQ1000s must be updated to v1.4 or later. EH24As must be updated to v2.3 or later.

VIDEO INPUTS

HDMI™:	1x HDMI input - to protect copyrighted content, this encoder does not support HDMI copy protection (HDCP)
Component:	1x HD Component (YCrCb) video input
Composite:	1x 1V p-p +/- 3dB, 480i only
Closed Captioning Input:	1x 1V p-p +/- 3dB, 480i composite video (used for Closed Captioning data extraction during HD encoding)

AUDIO INPUTS

RCA-type L+R:	1x 1Vrms nominal, 3.5Vrms maximum
HDMI Embedded Audio:	Supports PCM (uncompressed) digital audio from HDMI

VIDEO OPTIONS

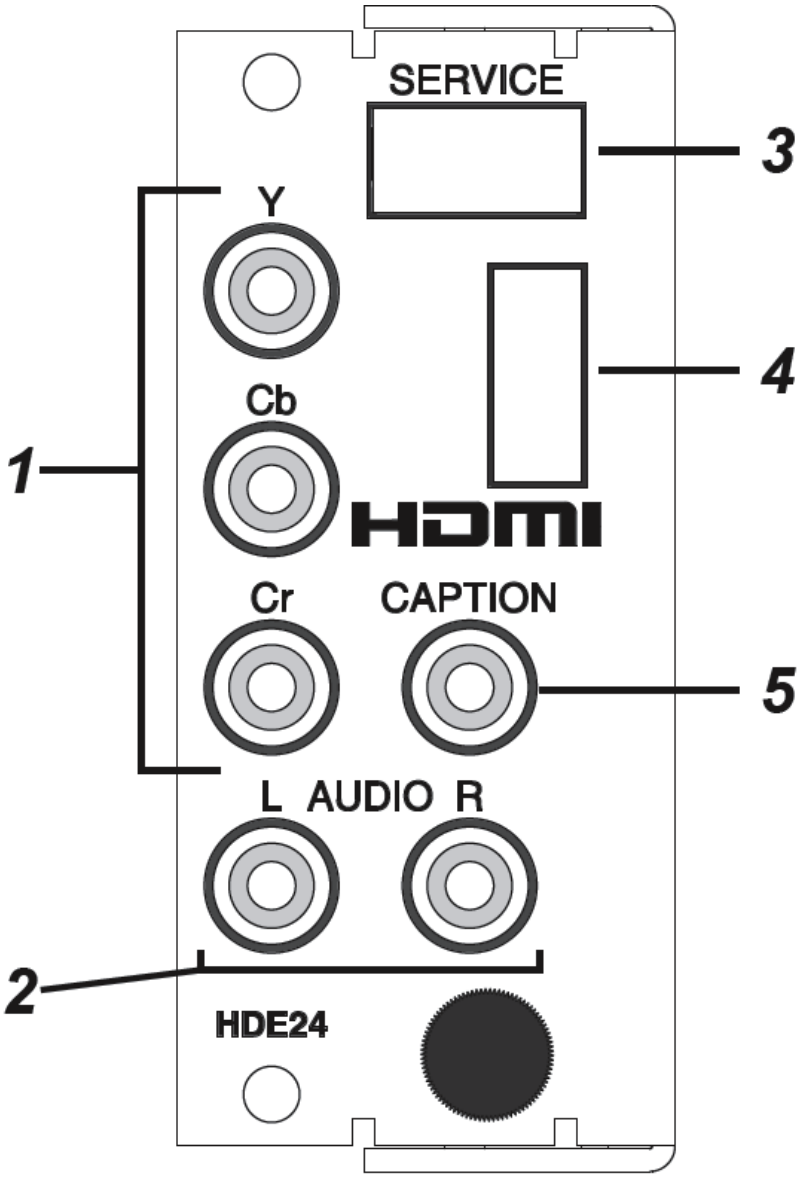
Input Video Modes Supported:	480i (640x480/720x480 @30fps) 480p (640x480/720x480 @60fps) 720p (1280x720 @60fps) 1080i (1920x1080 @30fps) Supports auto-scan for input resolution
Encoder Format:	Supports auto-scan for input resolution
Video Adjustments:	Brightness, contrast, hue, and saturation
MPEG4 Profile support	Simple, Advanced Simple, High
Bitrate:	Up to 19Mbps (depends on input format)

AUDIO OPTIONS

Encoder format:	Dolby® AC-3 or MPEG1 layer 2
Output Bitrate:	Variable; 128-320 kps

Specifications subject to change without notice or obligation.

6 Rear Panel Connections



1: Component video input. Y input is used for Composite video input as well.

2: Analog audio input.

3: Service port. Used during firmware updates of unit.

4: HDMI input. Supports embedded PCM audio. Does not support HDCP/Copy protection.

5: Closed captioning data input. Used during high-definition encodes to insert closed-caption data from a composite video source.

Manufactured under license from Dolby Laboratories

SERVICE INFORMATION

You may contact the R.L. DRAKE Service Department for additional information or assistance by calling +1 (937) 746-6990, Monday through Friday, between 8:00 A.M. and 4:00 P.M. Eastern Time, except on holidays.

You may also contact the R.L. DRAKE Service Department by E-mail at the following address: TechSupport@rldrake.com or by Telefax: +1 (937) 806-1510.

Should you want to return your unit for service, package the unit carefully using the original carton or other suitable container.

Write your return address clearly on the shipping carton and on an enclosed cover letter describing the service required, symptoms or problems. Also include your daytime telephone number and a copy of your proof of purchase.

The unit will be serviced under the terms of the R.L. DRAKE HOLDINGS LLC Limited Warranty and returned to you.

IF YOU NEED TO CALL FOR HELP

Call our Customer Service/Technical Support line at +1 (937) 746-6990 between 8:00 A.M. and 4:00 P.M. Eastern Time, weekdays. Please have the unit's serial number available. We will also need to know the specifics of any other equipment connected to the unit. When calling, please have the unit up and running, near the phone if possible.

Our technician(s) will likely ask certain questions to aid in diagnosis of the problem. Also, have a voltmeter handy, if possible. R.L. DRAKE also provides technical assistance by e-mail: TechSupport@rldrake.com or by Telefax: +1 (937) 806-1510.

Many of the products that are sent to us for repair are in perfect working order when we receive them. For these units, there is a standard checkout fee that you will be charged. Please perform whatever steps are applicable from the installation sections of the Owner's Manual before calling or writing—this could save unnecessary phone charges. Please do not return the unit without contacting R.L. DRAKE first: it is preferred to help troubleshoot the problem over the phone (or by mail) first, saving you both time and money.

Inside the carton, enclose a note with your name, address, daytime phone number, and a description of the unit's problem.

The unit must be sent to the following address:

Service Department
R.L. DRAKE
710 Pleasant View Drive
Springboro, Ohio 45066. USA

Be sure to include your street address which will be needed for UPS return. UPS Surface (Brown Label) takes 7-10 days to reach us depending on your location, Blue takes 2-3 days.

Red is an overnight service. Send the unit in a way that it can be traced if we can't verify receipt of shipment. We suggest UPS or insured postal shipment.

If the unit is still under the original owner's warranty, R.L. DRAKE will pay the cost of the return shipment to you. Our return shipping policy is that we will return it UPS Brown if received Brown or by US Mail, it will be returned Blue if received Blue or Red—or it will be returned however you prefer if you furnish the return cost for the method you select.

8 If You Need To Call For Help (continued)

If the unit is out of warranty, use one of the following methods for return shipment:

1) You designate billing to American Express, VISA, MasterCard or Discover card;

2) You prepay the service charges with a personal check, or

3) You specify some other method of return and payment.

When calling, the technician can estimate the repair charges for you over the phone. This is another good reason to call before sending a unit in for repair.

Typically, equipment is repaired in five to ten working days after it arrives at R.L. DRAKE if we have all the facts. If we must call you, it may take longer. R.L. DRAKE is not responsible for damage caused by lightning, nonprofessional alterations, “acts of God”, shipping damage, poor storage/handling, etc. R.L. DRAKE will make note of any shipping damage upon receipt.

You will need to send proof of purchase to receive warranty service. Typically, a copy of the invoice from an R.L. DRAKE dealer will suffice. The warranty is for the original owner only and is not transferable.

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Three Year Limited Warranty

R.L. DRAKE HOLDINGS LLC warrants to the original purchaser this product shall be free from defects in material or workmanship for three (3) years from the date of original purchase.

During the warranty period R.L. DRAKE HOLDINGS LLC or an authorized Drake service facility will provide, free of charge, both parts and labor necessary to correct defects in material and workmanship. At its option, R.L. DRAKE HOLDINGS LLC may replace a defective unit.

To obtain such a warranty service, the original purchaser must:

1. Retain invoice or original proof of purchase to establish the start of the warranty period.
2. Notify R.L. DRAKE HOLDINGS LLC or the nearest authorized service facility, as soon as possible after discovery of a possible defect, of:
    a) the model and serial number,
    b) the identity of the seller and the approximate date of purchase; and
    c) A detailed description of the problem, including details on the electrical connection to associated equipment and the list of such equipment.
3. Deliver the product to R.L. DRAKE HOLDINGS LLC or the nearest authorized service facility, or ship the same in its original container or equivalent, fully insured and shipping charges prepaid.

Correct maintenance, repair, and use are important to obtain proper performance from this product. Therefore carefully read the Instruction Manual. This warranty does not apply to any defect that R.L. DRAKE HOLDINGS LLC determines is due to:

1. Improper maintenance or repair, including the installation of parts or accessories that do not conform to the quality and specifications of the original parts.
2. Misuse, abuse, neglect or improper installation.
3. Accidental or intentional damage.

All implied warranties, if any, including warranties of merchantability and fitness for a particular purpose, terminate three (3) years from the date of the original purchase.

The foregoing constitutes R.L. DRAKE HOLDINGS LLC'S entire obligation with respect to this product, and the original purchaser shall have no other remedy and no claim for incidental or consequential damages, losses or expenses. Some states do not allow limitations on how long an implied warranty lasts or do not allow the exclusions or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state. This warranty shall be construed under the laws of Ohio.

For Service, contact:

R.L. DRAKE HOLDINGS LLC
710 Spring Valley Drive
Springboro, Ohio 45066. USA.
Customer Service and Parts Telephone: +1 (937) 746-6990
Telefax: +1 (937) 806-1510
Web Site: http://www.rldrake.com

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